THAT WHICH IS CLAIMED IS:

1. A power generator comprising:

a rotor;

a stator surrounding said rotor and having opposing ends, said stator comprising a stator core and a plurality of windings carried by said stator core creating an undesired axial magnetic field component adjacent the opposing ends of said stator; and

at least one counteracting magnetic field generator associated with at least one end of said stator for generating a counteracting magnetic field for counteracting the undesired axial magnetic field component.

2. A power generator according to Claim 1 wherein said at least one counteracting magnetic field generator comprises:

a first electrically conductive coil portion positioned for having an electrical current induced therein by said rotor; and

a second electrically conductive coil portion positioned adjacent the at least one end of said stator and connected to the first electrically conductive coil portion to receive the electrical current therefrom to generate the counteracting magnetic field.

3. A power generator according to Claim 2 wherein said stator is spaced from said rotor to define a gap therebetween; and wherein said first electrically conductive coil portion is positioned in the gap.

4. A power generator according to Claim 2 wherein said stator core includes a recess therein receiving said first electrically conductive coil portion.

5. A power generator according to Claim 2 wherein said windings comprise end windings extending outwardly beyond respective ends of said stator core; and wherein said second electrically conductive coil portion is positioned adjacent at least one end winding.

6. A power generator according to Claim 2 wherein relative positioning of said first and second electrically conductive coil portions provides a desired phase offset for the counteracting magnetic field.

7. A power generator according to Claim 1 wherein said at least one counteracting magnetic field generator comprises:

an electrically conductive coil portion adjacent the at least one end of said stator; and

a power source connected to said electrically conductive coil portion to generate the counteracting magnetic field.

8. A power generator according to Claim 7 further comprising at least one magnetic field sensor; and wherein said power source comprises a controller for controlling the counteracting magnetic field based upon said at least one magnetic field sensor.

9. A power generator according to Claim 7 wherein said power source provides a desired phase offset for the counteracting magnetic field.

10. A power generator according to Claim 1 wherein said stator core has at least one step at each end thereof.

11. A power generator according to Claim 1 further comprising a magnetic field shunt adjacent each end of said stator core.

12. A counteracting magnetic field generator for a power generator comprising a rotor and a stator surrounding the rotor and having opposing ends, the stator comprising a stator core and a plurality of windings carried by the stator core creating an undesired axial magnetic field component adjacent the opposing ends of the stator, the counteracting magnetic field generator generating a counteracting magnetic field for counteracting the undesired axial magnetic field component at at least one end of the stator and comprising:

a first electrically conductive coil portion positioned for having an electrical current induced therein by the rotor; and

a second electrically conductive coil portion positioned adjacent the at least one end of the stator and connected to said first electrically conductive coil portion to receive the electrical current therefrom to generate the counteracting magnetic field.

13. A counteracting magnetic field generator according to Claim 12 wherein the stator is spaced from the rotor to define a gap therebetween; and wherein said first electrically conductive coil portion is positioned in the gap.

14. A counteracting magnetic field generator according to Claim 12 wherein the stator core includes a recess therein receiving said first electrically conductive coil portion.

15. A counteracting magnetic field generator according to Claim 12 wherein the windings comprise end windings extending outwardly beyond respective ends of the stator core; and wherein said second electrically conductive coil portion is positioned adjacent at least one end winding.

16. A counteracting magnetic field generator according to Claim 12 wherein relative positioning of said first and second electrically conductive coil portions provides a desired phase offset for the counteracting magnetic field.

17. A counteracting magnetic field generator for a power generator comprising a rotor and a stator surrounding the rotor and having opposing ends, the stator comprising a stator core and a plurality of windings carried by the stator core creating an undesired axial magnetic field component adjacent the opposing ends of the stator, the counteracting magnetic field generator generating a counteracting magnetic field for

counteracting the undesired axial magnetic field component at at least one end of the stator and comprising:

an electrically conductive coil portion adjacent an end of the stator; and

a power source connected to said electrically conductive coil portion to generate the counteracting magnetic field.

18. A counteracting magnetic field generator according to Claim 17 further comprising at least one magnetic field sensor; and wherein said power source comprises a controller for controlling the counteracting magnetic field based upon said at least one magnetic field sensor.

19. A counteracting magnetic field generator according to Claim 17 wherein said power source provides a desired phase offset for the counteracting magnetic field.

20. A method for counteracting an undesired axial magnetic field component adjacent at least one end of a stator surrounding a rotor, the undesired axial magnetic field component created by a plurality of windings carried by a stator core of the stator, the method comprising:

generating a counteracting magnetic field adjacent the at least one end of the stator to counteract the undesired axial magnetic field component.

21. A method according to Claim 20 wherein generating comprises:

inducing an electrical current in a first electrically conductive coil portion;

connecting a second electrically conductive coil portion to the first electrically conductive coil portion to receive the electrical current therefrom to generate the counteracting magnetic field; and

positioning the second electrically conductive coil portion adjacent the at least one end of the stator.

22. A method according to Claim 21 further comprising positioning the first electrically conductive coil in a gap between the stator and the rotor.

23. A method according to Claim 21 further comprising positioning the first electrically conductive coil portion in a recess in the stator core.

24. A method according to Claim 21 wherein the windings comprise end windings; and further comprising positioning the second electrically conductive coil portion adjacent at least one end winding.

25. A method according to Claim 21 wherein relative positioning of the first and second electrically conductive coil portions provides a desired phase offset for the counteracting magnetic field.

26. A method according to Claim 20 wherein generating comprises:

positioning an electrically conductive coil portion adjacent and end of the stator; and

connecting a power source to the electrically conductive coil to generate the counteracting magnetic field.

27. A method according to Claim 26 further comprising controlling the counteracting magnetic field based upon at least one magnetic field sensor.

28. A method according to Claim 26 wherein the power source provides a desired phase offset for the counteracting magnetic field.